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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/917,147	07/27/2001	Thomas J. Pinnavaia	MSU 4.1-553	1331

21036 7590 11/13/2002

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EXAMINER
KUHAR, ANTHONY J

ART UNIT	PAPER NUMBER
1754	3

DATE MAILED: 11/13/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/917,147	PINNAVAIA ET AL.	
	Examiner	Art Unit	
	Anthony J Kuhar	1754	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____ .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-26* is/are pending in the application.

4a) Of the above claim(s) *9-26* is/are withdrawn from consideration.

5)☐ Claim(s) *1-3,7 and 8* is/are allowed.

6)☒ Claim(s) *4-6* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2 .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Election/Restrictions

Restriction to one of the following inventions is required under 35 U.S.C. 121:

I. Claims 1-8, drawn to a composition comprising alumina, classified in class 423, subclass 628.

II. Claims 9 and 10, drawn to a process for making a composition comprising alumina, classified in class 423, subclass 628.

III. Claims 11-14, drawn to a process for separating alumina and an organic modifier, classified in class 423, subclass 628.

IV. Claims 15-18, drawn to a process for dehydrating alumina, classified in class 423, subclass 628.

V. Claims 23-25, drawn to a process for catalytically transforming a reactant, classified in class 423, subclass 210+.

VI. Claim 26, drawn to a process for absorbing a reactant, classified in class 423, subclass 210+.

Inventions I and II are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case the process as claimed can be used to make an alumina without multiple wide angle x-ray diffraction lines.

Because these inventions are distinct for the reasons given above and the search required for Group I is not required for Group II, restriction for examination purposes as indicated is proper.

Inventions I and III-IV are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together and they have different modes of operation, different functions, or different effects (MPEP § 806.04, MPEP § 808.01). In the instant case the different inventions are unrelated because invention I is an alumina composition, optionally containing an organic modifier while inventions III-IV are a method for refining a hydrated alumina composition containing organic modifier to into non-hydrated form and without the organic modifier.

Because these inventions are distinct for the reasons given above and the search required for Group I is not required for Group III-IV, restriction for examination purposes as indicated is proper.

Inventions I and V-VI are related as product and process of use. The inventions can be shown to be distinct if either or both of the following can be shown: (1) the process for using the product as claimed can be practiced with another materially different product or (2) the product as claimed can be used in a materially different process of using that product (MPEP § 806.05(h)). In the instant case the process as claimed can be used with another product, such as an alumina without the recited multiple wide-angle diffraction lines.

Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

Inventions II and III-VI are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together and they have different modes of operation, different functions, or different effects (MPEP § 806.04, MPEP § 808.01). In the instant case the different inventions are unrelated because invention II is a process for making an alumina composition, optionally containing an organic modifier while inventions III-IV are a method for refining a hydrated alumina composition containing organic modifier to into non-hydrated form and without the organic modifier. Inventions V-VI are a method of using the product made in the process of invention II.

Because these inventions are distinct for the reasons given above and the search required for Group II is not required for Group III-VI, restriction for examination purposes as indicated is proper.

Inventions III and IV-VI are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together and they have different modes of operation, different functions, or different effects (MPEP § 806.04, MPEP § 808.01). In the instant case invention III is a method for separating alumina and organic modifier, while invention IV is a process for dehydrating alumina without organic modifier. Inventions V and VI are a method for using alumina optionally containing organic modifier.

Because these inventions are distinct for the reasons given above and the search required for Group III is not required for Group IV-VI, restriction for examination purposes as indicated is proper.

Inventions IV and V-VI are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together and they have different modes of operation,

different functions, or different effects (MPEP § 806.04, MPEP § 808.01). In the instant case invention IV is a process for dehydrating alumina without organic modifier. Inventions V and VI are a method for using alumina optionally containing organic modifier.

Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

Inventions V and VI are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together and they have different modes of operation, different functions, or different effects (MPEP § 806.04, MPEP § 808.01). In the instant case the different inventions cite different methods of using an alumina composition optionally containing organic modifier, one method via chemical conversion and the other via absorption.

Because these inventions are distinct for the reasons given above and the search required for Group V is not required for Group VI, restriction for examination purposes as indicated is proper.

During a telephone conversation with Ian C. McLeod on 11/1/02 a provisional election was made with traverse to prosecute the invention of Group I, claims 1-8. Affirmation of this election must be made by applicant in replying to this Office action. Claim9-26 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the

application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Specification

On page 21, line 13, cm^3/g is not a unit for surface area. It appears m^2/g was intended.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 4-6 and 8 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 4 recites the limitation "organic modifier component". There is insufficient antecedent basis for this limitation in the claim.

Claims 5 and 8 are indefinite as they have improper Markush language.

Claim 6 is improper since it does not refer to the claims in the alternative.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1, 2-5, and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Valange et al.

Valange et al. discloses mesostructured alumina with pore volumes of greater than or equal to 0.40 cm^3/g and with surface areas greater than 200 m^2/g (see page 605, left column and table 3). A non-ionic surfactant was used, namely NNDDNO. It appears it would have a lattice spacing of at least 2.0 nm. Valange does not disclose multiple wide angle x-ray diffraction lines, but may inherently show these lines in an x-ray diffractogram. Where the claimed and prior art product(s) are identical or substantially identical, or are produced by identical or substantially

identical process(es) the burden of proof is on applicant to establish that the prior art product(s) do not necessarily or inherently possess the characteristics of the instantly claimed product(s), see In re Best, 195 USPQ 430.

Claims 1, 2-5, and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gonzalez-Pena et al, "Thermally Stable Mesoporous Alumina Synthesized with Non-ionic Surfactants in the Presence of Amines".

Gonzalez-Pena et al. discloses mesostructured alumina with pore volumes of greater than or equal to 0.40 cm^3/g and with surface areas greater than 200 m^2/g (see table 1). Non-ionic surfactants were used, such as PEO and DPA. It appears it would have a lattice spacing of at least 2.0 nm from the x-ray diffractogram in Figure 1. Gonzalez-Pena et al. does not disclose multiple wide angle x-ray diffraction lines, but may inherently show these lines in an x-ray diffractogram. Where the claimed and prior art product(s) are identical or substantially identical, or are produced by identical or substantially identical process(es) the burden of proof is on applicant to establish that the prior art product(s) do not necessarily or inherently possess the characteristics of the instantly claimed product(s), see In re Best, 195 USPQ 430.

Claims 1-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gonzalez-Pena et al., "Improved Thermal Stability of Mesoporous Alumina Support of Catalysts for the Isomerization of Light Paraffins".

Gonzalez-Pena et al. discloses mesostructured alumina with pore volumes of greater than or equal to 0.40 cm^3/g and with surface areas greater than 200 m^2/g (see Figure 1B and Table 1

under Results and Discussion). Non-ionic surfactants were used, such as PEO (see first page of experimental). It appears it would have a lattice spacing of at least 2.0 nm from the x-ray diffractogram in Figure 2. Pseudo-boehmite and boehmite phases are taught at the bottom of the first two pages of the results and discussion section. Gonzalez-Pena et al. does not disclose multiple wide angle x-ray diffraction lines, but may inherently show these lines in an x-ray diffractogram. Where the claimed and prior art product(s) are identical or substantially identical, or are produced by identical or substantially identical process(es) the burden of proof is on applicant to establish that the prior art product(s) do not necessarily or inherently possess the characteristics of the instantly claimed product(s), see In re Best, 195 USPQ 430.

Claims 1-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pinnavaia '706.

Pinnavaia '706 discloses mesostructured alumina with pore volumes of greater than or equal to 0.40 cm^3/g and with surface areas greater than 200 m^2/g (see column 23, lines 39-40). Non-ionic surfactants were used, such as PEO (see column 14, line 47 to column 15, line 16). A low angle x-ray diffraction line corresponding to a basal spacing of at least 3.0 nm is taught in column 6, line, 57. The pseudo-boehmite phase is taught at the bottom of column 17. Pinnavaia '706 does not disclose multiple wide angle x-ray diffraction lines, but may inherently show these lines in an x-ray diffractogram. Where the claimed and prior art product(s) are identical or substantially identical, or are produced by identical or substantially identical process(es) the burden of proof is on applicant to establish that the prior art product(s) do not necessarily or

inherently possess the characteristics of the instantly claimed product(s), see In re Best, 195 USPQ 430.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anthony J Kuhar whose telephone number is 703-305-7095. The examiner can normally be reached on 8:30 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stan Silverman can be reached on 703-308-3837. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-305-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

AK

AK
November 6, 2002

STEVEN BOS
PRIMARY EXAMINER
GROUP 1754